

CUSTOMER STORY

Nissan Motor Co. Ltd.

With Anaplan, Nissan modernizes production planning and reduces development costs

INDUSTRY: Automotive & Industrial

SOLUTION: Production Planning in Supply Chain



Tasked with promoting digitalization, the global IS/IT division of Nissan Motor Co., Ltd. has promoted the modernization of internal IT infrastructure in line with NISSAN NEXT, the company's business transformation plan. As part of this initiative, Nissan upgraded its legacy mid- and long-term production planning system to Anaplan, a cloud-based planning solution, in 2022. The existing system had become complex due to a lot of extensions and add-ons that compromised usability and responsiveness. As a result, usability was compromised and responsiveness was unsatisfactory. Leveraging low-code development in Anaplan enabled Nissan to bring solution maintenance and enhancement in-house, yielding significant reductions in development costs and enabling insourced development that focuses on users' needs.

50%

cost savings in total cost for enhancement and license

LOW-CODE DEVELOPMENT

enables flexible and faster development

FLEXIBILITY

enables rapid implementation and quick wins

Company

Nissan Motor Co., Ltd.

Founded in 1933, Nissan Motor Co., Ltd. (Nissan) currently operates production facilities in 15 countries, including Japan, and provides products and services in over 170 countries and regions worldwide. Amid growing concern about climate change, Nissan launched the world's first mass-produced all-electric vehicle, "NISSAN LEAF," in 2010 for the global market. Ten years later, cumulative global sales of the Nissan LEAF reached 500,000 vehicles. The company is steadily expanding its EV lineup, including the all-electric minivehicle "NISSAN SAKURA", which was launched in Japan in 2022.

Use Case:

- Revamp the legacy mid- and long-term production planning system into a state-of-the-art, cloud-based solution

Challenges

- Developed in the early 2010s, the existing system was not compatible with the latest production planning processes and had to be enhanced with functional add-ons every year to keep pace with business evolution
- With more and more enhancements, functions became increasingly complex. Solution development was outsourced, resulting in a system that was a "black box" to the IS/IT
- Due to long development time for system enhancements, users faced extra work while awaiting enhanced functions

Goals

- Revamp production planning using a cloud-based, low-code development solution. Bring development in-house so needed enhancements can be added on quickly to keep pace with change
- Break the cycle in which solution enhancements increase system complexity, and reduce the cost of additional development

Why Anaplan?

- Flexible and speedy development using low-code development
- Can be applied to individual processes for quick wins

Three digital strategies support business transformation plan

Nissan continues to expand its lineup of electric vehicles — including the world's first mass-produced all-electric vehicle "NISSAN LEAF" and the all-electric minivehicle "NISSAN SAKURA" — in response to social demands. In the field of autonomous driving, Nissan's ProPILOT 2.0, a Level 2 driver-assistance technology (partial autonomous driving) that allows drivers to take their hands off the steering wheel on highways, was made available to the vehicles sold in market since September 2019. The company continues to create new technology, including its "ground truth perception" technology, announced in April 2022, which dramatically enhances collision avoidance.

According to Daisuke Masunaga, VP, IS/IT Strategy Planning and Control Div., Digital Transformation Promotion Division, "The automotive industry is poised on the edge of a once-in-a-century revolution. Specifically, competition is intensifying in the four areas known in the industry as 'CASE': Connected, Autonomous, Shared & Services, and Electrification. As a frontrunner in CASE, Nissan continues to accelerate the development of innovative technologies."

Digital technology underpins all of Nissan's business operations, from the development of innovative technologies to commercialization, production, and sales. The Global IS/IT Division is the driving force behind Nissan's DX, responsible for the development of digital infrastructure and applications, utilized across all business units and regions.

"In 2020, Nissan announced its transformation plan, "NISSAN NEXT", and the IS/IT Division formulated a digital strategy in line with this plan called "NISSAN DIGITAL NEXT". This strategy is underpinned by three core initiatives: Modernization, Drive innovation, and Outstanding Work Efficiency," explains Mr. Masunaga.



Daisuke Masunaga

VP, IS/IT Strategy Planning and Control Div.
Digital Transformation Promotion Division
Nissan Motor Co., Ltd.

Modernization is replacing legacy systems with state-of-the-art solutions. Drive Innovation is to pursue the innovation through the use of data. Outstanding Work Efficiency is to deliver digital tools to business units rapidly for maximum operational efficiency.

One of the key missions of the IS/IT Division is to further enhance Nissan's growth potential and value through these initiatives.

Reviewing legacy mid-term and long-range production planning systems

Of the three NISSAN DIGITAL NEXT initiatives, Modernization was arguably the most pressing. "The Japanese Ministry of Economy, Trade and Industry's 2018 DX Report highlighted the fact that many Japanese companies are still running legacy systems, as is Nissan," says Mr. Masunaga.

It was a part of Modernization to revamp the mid- and long-term production planning system. This system is used to determine three production factors: When vehicle components will be produced, which plants and lines will produce the components, and how many components will be produced based on Nissan's mid-term sales plan for the entire company.

"We use this system to plan production to achieve sales targets based on the production capacity of each of our global production bases," explains Yumi Yoshida of Nissan's Production & Supply Chain Management System department, Business System Solutions Division.

This key system has a significant impact on mid-term vehicle production planning, and its obsolescence had become a major issue for Nissan. "The system was developed from scratch in 2012, but its design was not suitable for current production planning process. We needed to add enhancements every year in order to keep pace with the changing times. As a result, the system had become more complex and less user-friendly," says Yuichi Sumiya, Nissan's Senior Manager of the Manufacturing & Supply Chain Management System department, Business System Solutions Division.



Yuichi Sumiya

Senior Manager, Manufacturing & Supply Chain Management Systems department, Business System Solutions Division, Nissan Motor Co., Ltd.

"Production plans need to be revised each time production requirements and sales change. The granularity of data sources used in the plans was not uniform, and there were multiple data sources, so the hours spent managing data were an issue," says Ms. Yoshida.

Annual system enhancements were outsourced to an external systems integrator because the system had originally been developed by an outside vendor. It had become impossible to make enhancements in-house because the solution had become a black box.

"In some cases, enhancements were taking anywhere from six months to a year, during which time users had to use spreadsheets and other tools to manually support production planning. Enhancement costs were also considerable, so we decided that the system should be given a complete makeover," explains Ms. Yoshida.



Yumi Yoshida

Manufacturing & Supply Chain Management Systems department, Business System Solutions Division, Nissan Motor Co., Ltd.

Support low-code development and easily facilitate in-house enhancements

The IS/IT Division established a project team in 2021 tasked with revamping mid- and long-term production planning system, with Mr. Sumiya and Ms. Yoshida among its members. The team considered multiple approaches, and ultimately selected Anaplan.

"After conducting a proof of concept, the team decided to select Anaplan because they judged it to be suitable for mid- and long-term production planning. Anaplan is a cloud-based solution that gives us the ability to add the functions users need to address changes in the business environment and it is able to integrate a wide variety of company data sources, as the phrase Connected Planning suggests," reflects Mr. Sumiya.

Tomoya Fukumoto, Nissan's Assistant Manager of the Manufacturing & Supply Chain Management Systems Department, Business System Solutions Division, was also on the project team. He explains:

“Unlike other supply chain management (SCM) planning solutions, it was easy to introduce it in a part of the process which focuses on a specific area. This was another reason we chose the platform.”

Ms. Yoshida says: “Now, we can add functions ourselves without outsourcing the enhancement process to an external systems integrator, which speeds up the development process. It is highly regarded. Anaplan’s low-code development also means that we can respond quickly to production plans that change daily.”

What’s more, bringing systems development in-house makes it possible to add new functions quickly, meaning no interruptions for users. Ms. Yoshida believes the business value of Anaplan is extremely high.



Tomoya Fukumoto

Assistant Manager, Manufacturing & Supply Chain Management System Department, Business Solutions Division, Nissan Motor Co., Ltd.

Enhancements and add-ins done in-house generated 50% cost reduction

The process of replacing Nissan’s mid- and long-term production planning system with Anaplan commenced in June 2022. The changeover took approximately six months to complete. The system was able to go live in such a short time due to Anaplan’s unique features that allow for ‘quick-win’ implementation by narrowing down the target processes.

When switching to new technology systems, usually, user manuals are created or training is implemented in order to help end users learn the new system. But as Mr. Sumiya notes,

“Creating a user manual and keeping it up to date is hard work, so we added a function that displays an operation guide on the screen, omitting the need for a user manual. The ease with which such functions can be added is one of Anaplan’s most useful features.”

Switching to Anaplan has allowed enhancements to the production planning system to be brought in-house. This has delivered major financial benefits, since it is no longer necessary to pay a third-party systems integrator for this work. As Ms. Yoshida remarks: “We’ve seen cost savings of around 50% when comparing the cost of the Anaplan license with the cost of enhancements delivered by third-party vendors.”

Bringing system enhancement in-house has also given the IS/IT Division increased relevance. Speaking of future aspirations, Ms. Yoshida says, “When enhancement was outsourced, we had to summarize the end user requests in the Production Planning & Control Division and convey them to the systems integrator for development. But with Anaplan, a new user interface can be engineered in just thirty minutes. What’s more, as the development skills of the IS/IT Division have improved, we are now able to suggest functional add-ons that can improve efficiency. Our aim is to launch a DX push to propose more effective systems to users.”

Moving forward, the IS/IT Division plans to expand the utilization of Anaplan beyond mid- and long-term production planning. As Mr. Sumiya explains: “Currently, the data that is used for production planning is managed by plant production departments in spreadsheets, with the results being entered manually into the existing core system. By replacing those spreadsheets with Anaplan, we will streamline and standardize data management and unify the data entry for users. I look forward to getting the new value this will create.”

The teams also expect to accelerate creation of production plans. “I aim to increase the speed and accuracy of planning across multiple business areas by leveraging Anaplan’s strengths in enabling connected planning,” says Ms. Yoshida.

In conclusion, Mr. Fukumoto adds: “Since COVID-19, all companies have been forced to modify production plans due to difficulties in procuring parts on time. More flexible production planning is needed now more than ever. In this situation, I would like to respond to shifts in the business environment by quick development, as well.”

※ Individuals’ departments and titles are as of June 2023.

About Anaplan

Anaplan transforms the way you see, plan, and lead your business. By dynamically connecting financial, strategic, and operational plans in real time, Anaplan gives you the power to anticipate change, address complexity, and move at market speed. Anaplan’s Connected Planning platform lets you view and contextualize current performance, forecast future outcomes to fuel growth and mitigate risk, and optimize costs so you can make faster, more strategic decisions. Anaplan helps more than 2,400 market-leading customers in over 50 countries navigate their daily planning challenges with confidence.

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